

REMARKS/ARGUMENTS

Introduction

Claim 65 is amended, and claims 60 and 70 are canceled. Claims 41, 43-46, 49, 54, 55, 57-59, and 65-69 are now pending in the application. (Claims 1-40, 42, 47, 48, 50-53, 56, and 61-64 were previously canceled.) Applicants respectfully request reexamination and reconsideration of the application.

Regarding the objection to the drawings

The drawings were objected to as allegedly not being properly cross hatched. Applicants respectfully assert that the drawings are clear and a person of ordinary skill in the field would have no trouble understanding the drawings. Applicants therefore respectfully request that the objection to the drawings be withdrawn.

Regarding the 102 rejections

Claims 44, 45, 55, 65 and 66 stand rejected as anticipated by US Patent No. 3,383,564 to Lalmond ("Lalmond"). In addition, claims 43, 46, 57-59, and 67-70 were rejected as anticipated by US Patent No. 3,846,166 to Saiki ("Saiki"); claims 43, 46, 65, and 67-70 were rejected as anticipated by US Patent No. 5,436,411 to Pasch ("Pasch"); claims 41 and 65 were rejected as anticipated by US Patent No. 5,461,775 to Tanabe ("Tanabe"); and claims 41, 60, and 65 were rejected as anticipated by US Patent No. 4,436,766 to Williams ("Williams"). Applicants respectfully traverse these rejections.

Independent Claim 65 recites "a contact tip structure on at least a side of said main body region that faces away from said substrate, said contact tip structure configured to contact and thereby make an electrical connection with another electronic component." Applicants note that former claim 60, which is canceled, recited "a contact tip structure." In the most recent Office Action of July 11, 2003, claim 60 was not rejected as anticipated by Lalmond, Saiki, Pasch, or Tanabe. The PTO thus presumably recognized that none of Lalmond, Saiki, Pasch, or Tanabe discloses a contact tip structure. Indeed, as discussed below, none of Lalmond, Saiki, Pasch, or Tanabe discloses a contact tip structure like the contact tip structure now recited in claim 65, nor is there a logical reason to modify Lalmond, Saiki, Pasch, or Tanabe to add such a contact tip structure.

As shown in Figures 2-7 of Lalmond, treated surface 60 (which the PTO equated with the conductive material and thus the contact structure of claim 65) does not have a contact tip. In fact, as shown in Figures 5-7, treated surface 65 forms a mere flat surface of Lalmond's circuit matrix. Not only is there no disclosure of contact tips on treated surface 60, there is no logical reason to modify Lalmond by putting contact tips on treated surface 60. Indeed, Lalmond merely discloses a "circuit matrix" having several conductive layers separated by dielectric material and interconnected by conductive vias through the dielectric material. There is no reason for such a device to have contact tips like the tips recited in claim 65 on treated surface 60. At least for the foregoing reason, claim 65 is patentable over Lalmond.

For generally similar reasons, claim 65 is also patentable over Saiki, Pasch, and Tanabe each of which—like Lalmond—merely discloses multilayer circuit substrates that not only do not have contact tip structures but would not benefit from contact tip structures. For example Saiki's second wiring layer 18 (which the PTO equated with the conductive material and thus the contact structure of claim 65) is merely metal layer two on a semiconductor die. No contact tip structure is disclosed, and there would be no reason to modify Saiki to include a contact tip structure like the contact tip structure recited in claim 65 at least because there is no intention disclosed in Saiki that metal layer two 18 be brought into contact with another electronic device. Pasch's second metal wiring layer 114 (which the PTO equated with the conductive material and thus the contact structure of claim 65) likewise lacks a contact tip structure, and as can be deduced from Figure 4b, Pasch's intention is to connect second metal wiring layer 114 to another electronic component (e.g., die 410a) using a bonded wire 420a. Tanabe's second printed circuit 4 (which the PTO equated with the conductive material and thus the contact structure of claim 65) likewise lacks a contact tip structure like the contact tip structure recited in claim 65. Moreover, Tanabe's intention is that terminals 5a of another electronic component 5 be electrically connected to second printed circuit 4 by being sandwiched between layer 6 and second printed circuit 4 as can be seen in Figure 3A. Again, there is no reason to modify Tanabe to place a contact tip structure like the contact tip structure recited in claim 65 on the second printed circuit 4.

For at least the foregoing reasons, claim 65 is patentable over Lalmond, Saiki, Pasch, and Tanabe.

Turning now to Williams, Applicants note that the PTO equated Williams' substrate 11 with the substrate of claim 65, Williams' bridge 20c with the main body region of claim 65, and William's pillar 20b with the contact tip of former claim 60. Claim 65 now recites, however, "a contact tip structure ***on at least a side of said main body region that faces away from said substrate.***" As can be seen in Figure 1, Williams' pillar 20b is on a side of bridge 20c that faces substrate 11, and in fact, the purpose of pillar 20b is to electrically connect bridge 20c to capacitor plate 15. Consequently, pillar 20b cannot be moved to a side of bridge 20c that faces away from substrate 11. It is therefore not obvious to modify Williams by moving pillar 20b to a side of bridge 20c that faces away from substrate 11. For at least the foregoing reasons, claim 65 is patentable over Williams.

Claims 41, 43-46, 49, 54, 55, 57-59, and 66-69 depend from independent claim 65 and, at least because of that dependency, are also patentable over Lalmond, Saiki, Pasch, Tanabe, and Williams.

Regarding the 103 rejections

Claim 49 stands rejected under 35 USC 103(a) as obvious in view of Pasch, and claim 54 stands rejected as obvious in view of Lalmond and US Patent No. 5416278 to Ostrem et al. ("Ostrem"). Applicants respectfully traverse these rejections.

For at least the reasons discussed above, independent claim 65 is patentable over Pasch and Lalmond, and claims 49 and 54 depend from claim 65. Moreover, the PTO did not rely on Ostrem for a teaching regarding contact tip structures. Ostrem therefore presumably does not make up for the above discussed deficiencies in Pasch and Lalmond. For at least these reasons, claims 49 and 54 are patentable over Pasch and Lalmond and Ostrem.

Conclusion

In view of the foregoing, Applicants submit that all of the claims are allowable and the application is in condition for allowance. If the Examiner believes that a discussion with Applicants' attorney would be helpful, the Examiner is invited to contact the undersigned at (801) 426-2106.

Respectfully submitted,

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